

REMARKS

Claims 1-2, 4-22, 33-34, and 36-60 are currently pending. Claims 1, 9, 14, 33, 41, and 55 are currently amended, without acquiescence in the cited basis for rejection or prejudice to pursue the original claims in a related application. Applicants submit that the deleted claim elements are not needed for forming the basis for the arguments or for clarifying the claimed inventions as embodied in the respective claims. No new matter has been added.

I. Correction of Inventorship

Applicants wish to thank the examiner for kindly reminding Applicants of the missing fees for correction of inventorship under 37 C.F.R. § 1.48 to expedite the examination process of this Application. Applicants respectfully submit that the Commissioner is authorized to charge the fees under 37 C.F.R. § 1.48(b)(2) and § 1.17(i) for the correction of inventorship pursuant to 37 C.F.R. § 1.48(b) to Bingham McCutchen's Deposit Account No. 50-4047, referencing billing number 7012162001.

II. Objections to the Claims

Claims 14 and 55 stand objected to for containing minor informalities. In response, Applicants respectfully submit that claims 14 and 55 are currently amended and are believed to have overcome the objections. Applicants thus respectfully request withdrawal of the objections and reconsideration of claims 14 and 55.

III. Claim Rejections Under 35 U.S.C. §101

Claims 33-34, 36-40, and 41-54 stand rejected under 35 U.S.C. §101 for being directed to non-statutory subject matter. In response, Applicants respectfully submit that independent claims 33 and 41 are currently amended to recite a tangible volatile or non-volatile medium usable by a processor and are believed to have overcome the rejections. Applicants thus respectfully request withdrawal of the objections and reconsideration of claims 33-34, 36-40, and 41-54.

IV. Claim Rejections-35 U.S.C. §103

Claims 1-2, 4-13, 15-19, 21-22, 33-34, 36-45, 47-51, 53-55, 57-58, and 60 stand rejected under 35 U.S.C. §103(a) as unpatentable over Passerone, “*Fast Hardware/Software Co-Simulation for Virtual Prototyping and Trade-Off Analysis*”, 1997, Proceedings of Design Automation Conference 1997 (hereinafter Passerone) in view of U.S. Patent No. 6,230,114 issued to Hellestrand (hereinafter Hellestrand) further in view of Zivojnovic, *Compiled HW/SW Co-simulation*, 1996 (hereinafter Zivojnovic). Applicants respectfully traverse.

A. Claim 1 recites at least the following limitations. Claims 9, 33, 41, and 55 also recite similar limitations.

generating a software simulation model ***by translating*** the assembler code
or ***disassembling*** a binary code ***into a high level language format and***
by annotating the software simulation model with information related to
estimation or determination of the performance of hardware on which
the software program runs ***to capture an interaction between tasks***
during runtime;

(emphasis added.)

According to the final Office Action, Passerone does not disclose or suggest the above limitation but Hellestrand and Zivojnovic do. The final Office Action further acknowledges that Hellestrand does not disclose the limitation of “translating the assembler code . . .” Applicants respectfully agree with the final Office Action that Passerone does not disclose, teach, or suggest the above claimed limitations and that Hellestrand does not disclose or suggest the limitation of “translating the assembler code . . .”, but Applicants respectfully disagree that Zivojnovic does.

- (a) The final Office Action cites to p. 692 § IV of Zivojnovic and purports that the cited passages disclose the above claimed limitation. Applicants respectfully disagree.
- (i) Zivojnovic discloses an approach to make the translation process less complex and more portable by using the compiled simulation approach which translates a target instruction into one or more host instructions, where both the target instructions and the host

instructions are assembly codes. *§ IV, left hand column, second and third paragraphs and right hand column, fourth paragraph.*

Nonetheless, Applicants respectfully submit that this is not the claimed limitation. Zivojnovic explicitly states that “[h]owever, **compiled-simulation assumes that the code does not change during run-time.** Therefore, self-modifying programs will **force us to use a hybrid interpretive/compiled scheme.** Fortunately, self-modifying programs are rare” *§ IV, right hand column, third paragraph.* That is, the compiled-simulation approach as described in section IV of Zivojnovic only applies when the code does **not change during run-time**, and Zivojnovic applies the interpretative simulators when the code does change during run-time. In contrast, claim 1 specifically recites “generating a software simulation model . . . and by **annotating** the software simulation model . . . **to capture a dynamic interaction between tasks during runtime**”. Therefore, Applicants respectfully submit that Zivojnovic’s compiled-simulation approach as described in § IV does not disclose or suggest the aforementioned limitation. In fact, Zivojnovic explicitly states that the compiled-simulation approach **does not apply** to the situation where the code changes during run-time.

As such, Applicants respectfully submit that Zivojnovic may not disclose at least the aforementioned claimed limitation of “generating a software simulation model . . . to capture a dynamic interaction between tasks during runtime”. As such, Applicants respectfully submit that Passerone, Hellestrand, Zivojnovic, and their combinations do not disclose all the limitations of these claims and thus may not be used to preclude the patentability of these claims under 35 U.S.C. § 103(a).

(b) Although the final office action does not rely on Hellestrand in forming the basis for rejecting the above limitation, Applicants nonetheless respectfully submit that Figs. 3A-3B of Hellestrand illustrate the flow chart of the **static analysis** process and how the information of the **static analysis** is used. Applicants thus respectfully submit that Hellestrand does not disclose, teach, or suggest the above limitations.

As such, Applicants respectfully submit that since Zivojnovic does not disclose, teach, or suggest at least the above limitation, and since the final office action acknowledges that Passerone and Hellestrand do not disclose the same, Passerone, Hellestrand, Zivojnovic,

and their combination may not be used to preclude the patentability of 1, 9, 33, 41, 55, and their respective dependent claims under 35 U.S.C. § 103(a) for at least the reasons provided in subsections (a) and (b).

V. Claim Rejections-35 U.S.C. §103

Claims 14 and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Passerone as modified by Hellestrand and Zivojnovic in view of Hartoog et al, *Generation of Software Tools from Processor Descriptions for Hardware / Software Codesign*, Proceedings of the 34th Design Automation Conference, June 9-13, 1997 (hereinafter Hartoog). Applicants respectfully traverse.

As the final Office Action does not rely on Hartoog in forming the basis for rejection of the limitation in section IV-A, Applicants respectfully submit that claims 14 and 46 are believed to be allowable over Passerone, Hellestrand, Zivojnovic, Hartoog, and their combination for at least the foregoing reasons as presented in section IV-A above and their dependency on claim 1 and 41.

VI. Claim Rejections-35 U.S.C. §103

Claims 20, 52, and 59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Passerone as modified by Hellestrand and Zivojnovic further in view of Suzuki et al, *Efficient Software Performance Estimation Methods for Hardware/Software Codesign*, 1996 Proceedings of the 33rd Annual Conference on Design Automation (hereinafter Suzuki). Applicants respectfully traverse.

As the final Office Action does not rely on Suzuki in forming the basis for rejection of the limitation in section IV-A, Applicants respectfully submit that claims 20, 52, and 59 are believed to be allowable over Passerone, Hellestrand, Zivojnovic, Suzuki, and their combination for at least the foregoing reasons as presented in section IV-A above and their dependency on claim 1 and 41.

CONCLUSION

Based on the foregoing, all claims are believed allowable, and an allowance of the claims is respectfully requested. If the Examiner has any questions or comments, the Examiner is respectfully requested to contact the undersigned at the number listed below.

Applicant(s) hereby explicitly retracts and rescinds any and all of the arguments and disclaimers presented to distinguish the prior art of record during the prosecution of all parent and related application(s)/patent(s), and respectfully requests that the Examiner re-visit the prior art that such arguments and disclaimers were made to avoid.

The Commissioner is authorized to charge any fees due in connection with the filing of this document to Bingham McCutchen's Deposit Account No. 50-4047, referencing billing number 7012162001. The Commissioner is authorized to credit any overpayment or to charge any underpayment to Bingham McCutchen's Deposit Account No. 50-4047, referencing billing number 7012162001.

Respectfully submitted,

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